CLAIMS

1. Polypeptide which can be used as immunogenic element, characterized in that it is carried by the peptide sequence between the amino acid residues 130 and 230 of the sequence of the G protein of human respiratory syncytial virus of subgroup A and of subgroup B, or of bovine respiratory syncytial virus, or by a sequence having at least 80% homology with said peptide sequence.

2. Polypeptide according to claim 1, characterized in that it comprises the peptide sequence between the amino acid residues numbered 174 and 187 of RSV protein G or a sequence having at least 80% homology with the corresponding sequence.

3. Polypeptide according to one of claims 1 or 2, characterized in that it comprises a sequence in which:

a) the Cys amino acid in positions 173 and/or 186 has been replaced by an amino acid not forming a disulfide bridge, in particular serine, and/or

b) the amino acids in positions 176 and 182 are capable of forming a covalent bridge other than a disulfide bridge, especially aspartic acid and ornithine.

4. Polypeptide according to one of claims 1 to 3, characterized in that it consists of a peptide sequence between the amino acid residues numbered 140 and 200 of the sequence of RSV protein G or of a sequence having at least 80% homology with said peptide sequence.

5. Polypeptide according to one of claims 1 to 3, characterized in that it consists of a peptide sequence between the amino acid residues numbered 158 and 190 of the sequence of RSV virus [sic] protein G or of a sequence having at least 80% homology with said peptide sequence.

6. Polypeptide according to one of claims 1 to 3, characterized in that it consists of the peptide sequence between the amino acid residues numbered 130 and 230 of the sequence of protein G of human RSV, subgroup A and subgroup B or of bovin RSV, or of a sequence having at least 80% homology with said peptide sequence.

7. Polypeptid according to one of claims 1 to 3,

characterized in that it has one of the following sequences:

Seq id n° 5 :

Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys.

Seq id n° 6 :

Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys.

Seq id n° 7 :

Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys.

Seq id n° 8 :

Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys.

Seq id n° 9 :

Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Cys Lys.

Seq id n° 10 :

Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Cys Lys.

Seq id n° 11 :

Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys.

Seq id n° 12 :

Ser Ile Asp Gly Asn ASn Gln Leu Orn Lys Ser Ile Ser Lys.

8. Polypeptide according to one of claims 1 to 3, characterized in that it has one of the sequences ID No. 14 to 73.

9. Polypeptide according to one of claims 1 to 8, characterized in that it additionally comprises at least one cysteine residue in the N-terminal or C-terminal position.

10. Immunogenic agent, characterized in that it comprises a polypeptide according to one of claims 1 to 9 coupled to a carrier protein.

11. Immunogenic agent according to claim 10, characterized in that the carrier protein is an immune adjuvant protein.

12. Immunogenic agent according to one of claims 10 and 11, characterized in that the carrier protein is an OmpA protein.

13. Agent according to one of claims 10 to 12, characterized in that the polypeptid is in the form of a soluble conjugate with a protein of the external membrane of a bacterium of the genus Klebsiella.

14. Agent according to one of claims 11 to 13, characterized in that the immune adjuvant protein is protein p40 of Klebsiella pneumoniae or a protein having 80% homology with protein p40.

15. Agent according to one of claims 10 to 14, characterized in that the polypeptide is conjugated to the carrier protein by a linking protein.

16. Agent according to claim 15, characterized in that the linking protein is the human serum albumin receptor.

17. Agent according to one of claims 10 to 16, characterized in that said polypeptide is coupled to a protein comprising sequence id No. 13.

18. Agent according to one of claims 10 to 17, characterized in that the coupling is a covalent coupling.

19. Agent according to one of claims 10 to 18, characterized in that it is obtained by a biological route.

20. Composition useful for the prevention and/or treatment of infections provoked by human RSV, subgroup A and/or subgroup B, or bovine RSV characterized in that it contains a polypeptide according to one of claims 1 to 9 or an agent according to one of claims 10 to 19.

21. Composition according to claim 20, characterized in that it additionally contains pharmaceutically acceptable excipients adapted for administration by the injectable route.

22. Composition according to one of claims 20 or 21, characterized in that it comprises a nonspecific immune adjuvant.

23. Nucleotide sequence, characterized in that it codes for a polypeptide according to one of claims 1 to 9.

24. Nucleotide sequence, characterized in that it codes for a protein comprising sequence id No. 13.

25. Process for the preparation of a conjugated peptide insert d in a composition according to one of claims 20 or 21, characterized in that:

a) the membrane lipopolysaccharides of bacteria of the genus Klebsiella are precipitated in the pr sence of a salt of a dival nt cation and of detergents to recover the total membrane proteins in the supernatant,

b) the proteins are submitted to anion-exchange chromatography to separate the fraction containing the immune adjuvant protein,

c) the fraction containing the immune adjuvant protein is concentrated,

d) the immune adjuvant protein is conjugated with a polypeptide according to one of claims 1 to 9 to form a soluble conjugate.

26. Process according to claim 25, characterized in that step d) is carried out in the presence of glutaraldehyde at concentrations lower than or equal to 0.05% and during a period greater than or equal to 5 days.

27. Use of a protein having sequence id No. 13 or a sequence having at least 80% homology, for improving the immunogenicity of an antigen.